



# Implementing EVM on a Government Project The Good, The Bad and The Ugly



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# History

- TRW (1980 – 1995)
  - Started with TRW Aerospace in 1980
  - Transferred to TRW Environmental in 1991
- Welcom Software (1995 – 1997)
- NAVAIR (1997 – 2006)
- NASA (2005 – Present)

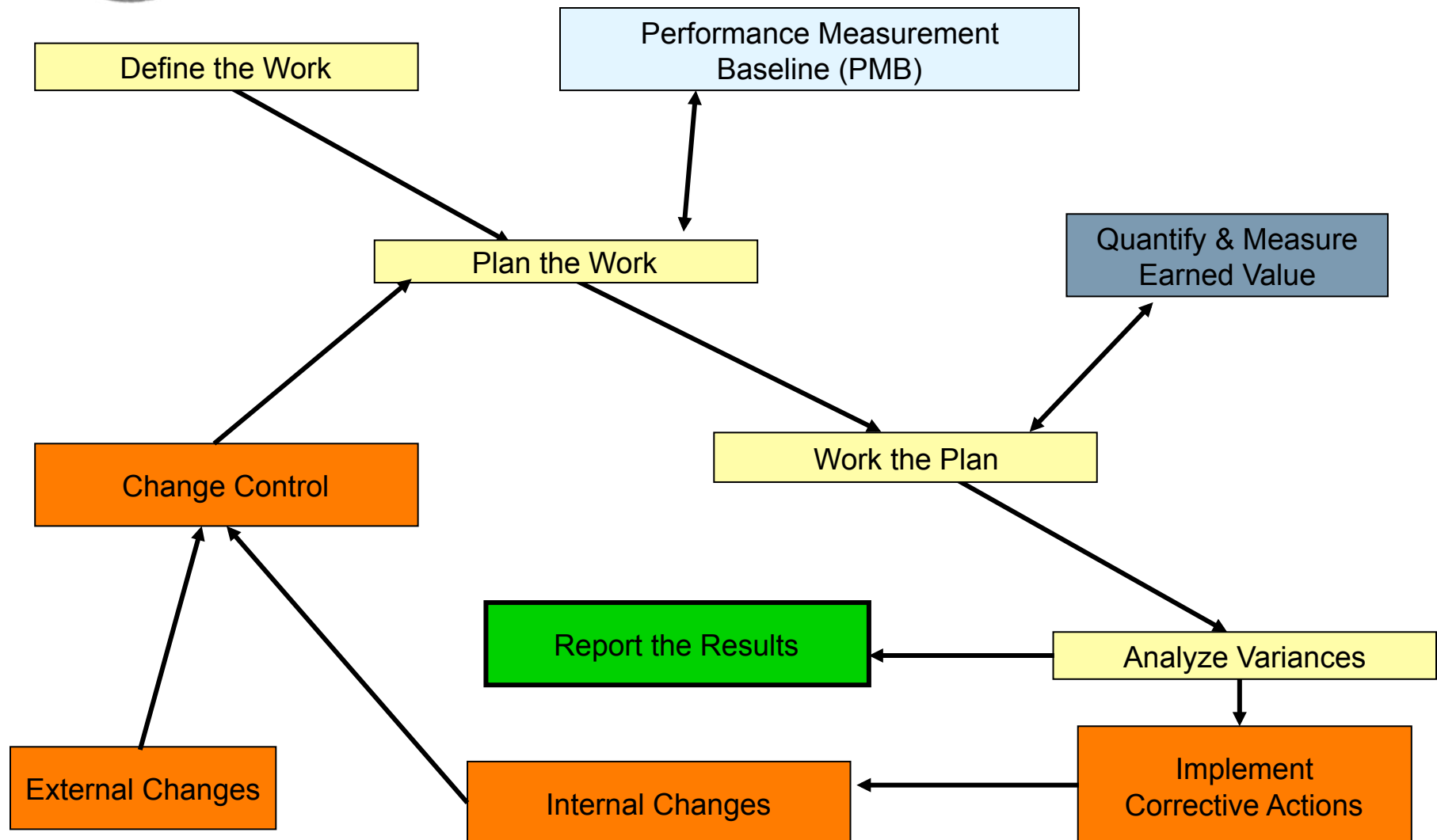


# Prelude

- The government implements an EVM system the same as a contractor does.
  - WBSs have to be set up
  - OBSs have to be entered
  - Resource levels need to be decided
  - Calculations need to be established
  - Rates need to be applied
  - Calendars have to be coordinated with schedules
- Integration of in-house government work and contractor work handled in wInsight
- This presentation will cover some of the issues and resolutions encountered along the way



# Planning Process Overview





## The Good

# System Integration





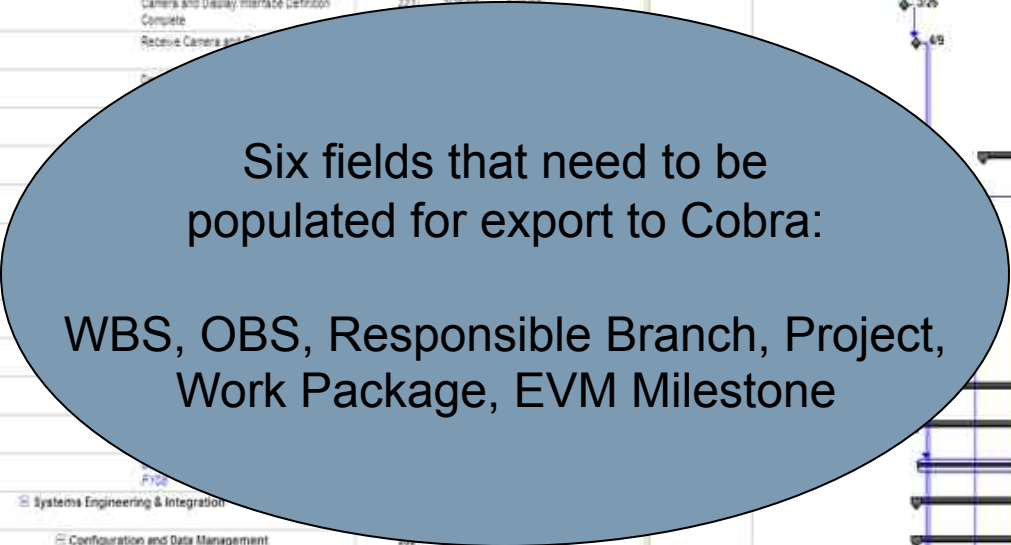
## Issue: System Integration

- When entering information in the Cost and Schedule systems in parallel, information can get out of sync. You could end up with schedule where there is no budget or budget where there is no schedule.
- Integrating major contractor information into government reporting for total program management



## Solution: Resource Loaded Schedules

- Resource load schedules to the activity level.
- Populate the fields necessary for integration with Cobra (Cost account key fields, work package, and milestone)
- Export from MSP to Excel
- Import from Excel to Cobra
- Export to wInsight and merge with contractor CPR data







## The Bad

- MSP and Cobra Time Phasing of Resources
- Resources Changing Departments



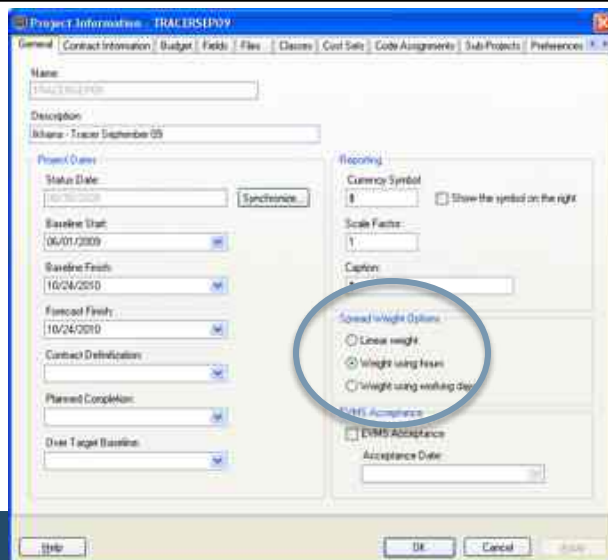


## Issue: Time Phased Export from MSP to Cobra

- Before

Task_Unique_ID	Resource_Name	Scheduled_Work	Start_Date	Finish_Date
219	DFRC_ODC	1,750,000	7/1/09	8/31/10
221	Z_FTE	3,934 hrs	7/1/09	8/12/10
221	Z_GRD	1,348.8 hrs	7/1/09	8/12/10
221	DFRC_ODC	11,660	7/1/09	8/12/10
229	DFRC_TRAVEL	35,000	8/3/09	8/27/10
230	DFRC_ODC	6,000	9/28/10	12/23/10

When loading into Cobra from MSP mapping capability, total Scheduled\_Work would be level loaded across the time period based on options chosen in Cobra.





# Solution: Timephased Macro - MSP

- After

Task UID	Resource	Schedule	Start	Finish
219	DFRC_ODC	130952.4	7/1/2009	7/31/2009
219	DFRC_ODC	125000	8/1/2009	8/31/2009
219	DFRC_ODC	125000	9/1/2009	9/30/2009
219	DFRC_ODC	125000	10/1/2009	10/30/2009
219	DFRC_ODC	113095.2	11/1/2009	11/30/2009
219	DFRC_ODC	130952.4	12/1/2009	12/31/2009
219	DFRC_ODC	113095.2	1/1/2010	1/29/2010
219	DFRC_ODC	113095.2	2/1/2010	2/26/2010
219	DFRC_ODC	136904.8	3/1/2010	3/31/2010
219	DFRC_ODC	130952.4	4/1/2010	4/30/2010
219	DFRC_ODC	119047.6	5/1/2010	5/28/2010
219	DFRC_ODC	130952.4	6/1/2010	6/30/2010
219	DFRC_ODC	125000	7/1/2010	7/30/2010
219	DFRC_ODC	130952.4	8/1/2010	8/31/2010
221	DFRC_ODC	912.8826	7/1/2009	7/31/2009
221	DFRC_ODC	871.3879	8/1/2009	8/31/2009
221	DFRC_ODC	871.3879	9/1/2009	9/30/2009
221	DFRC_ODC	871.3879	10/1/2009	10/30/2009
221	DFRC_ODC	788.3986	11/1/2009	11/30/2009
221	DFRC_ODC	912.8826	12/1/2009	12/31/2009
221	DFRC_ODC	788.3986	1/1/2010	1/29/2010
221	DFRC_ODC	788.3986	2/1/2010	2/26/2010
221	DFRC_ODC	954.3772	3/1/2010	3/31/2010
221	DFRC_ODC	912.8826	4/1/2010	4/30/2010
221	DFRC_ODC	829.8932	5/1/2010	5/28/2010
221	DFRC_ODC	912.8826	6/1/2010	6/30/2010
221	DFRC_ODC	871.3879	7/1/2010	7/30/2010
221	DFRC_ODC	373.452	8/1/2010	8/12/2010
230	DFRC_ODC	300	9/28/2010	9/30/2010
230	DFRC_ODC	2000	10/1/2010	10/29/2010
230	DFRC_ODC	2000	11/1/2010	11/30/2010
230	DFRC_ODC	1700	12/1/2010	12/23/2010

Calendar month  
start date or  
scheduled start  
date whichever  
is greater

Calendar month  
end date or  
scheduled  
finish date  
whichever is  
lesser



## MSP Task Usage View

# Cobra Report



## Issue: Resource Changing Departments

- How to deal with planning, actual, and performed data when a resource changes departments
  - Resource can only be assigned to one parent code per resource breakdown structure
  - Currently when a resource changes codes all data follows to new parent code because data is tied to the lowest common denominator – resource name
- This affects reporting by OBS not WBS





# Issue: Resource Changing Departments

Deltek Cobra

File Edit Initialize Status Tools Reports System Window Help

Program: RBS7EST

Status Date: 06/30/2007 Batch No: 915

WBS	OBS	PROJ	Description	PV	EV	AC	BAC	EAC	Status
1.01.03	B	TEST_EVM	Program/Project Control	\$0.00	\$0.00	\$0.00	\$59,254.96	\$0.00	Unopen
1.06.02	O	TEST_EVM	Routine Maintenance	\$0.00	\$0.00	\$0.00	4,000,000.00	\$0.00	Unopen

W/P	Description	PV	EV	AC	BAC	EAC	Status
L01	Test input	\$0.00	\$0.00	\$0.00	\$59,254.96	\$0.00	Unopen

Details: Control Account 1.01.03/B/TEST\_EVM - Work Package L01 (Unopen)

Status: Baseline | **None** | Forecast | Codes | Notes

Desc: Test input

Schedule Start: 10/01/2007 Finish: 09/30/2009

PMT: Level of Effort

Budget Costs

Reporting Set Filter: < All >

Resource	Description	Class	Class Description	Budget	Units
DAWS_PATRICIA_R		CB	Current Budget	1758.00	HOURS
ODOM_MARY_L		CB	Current Budget	1758.00	HOURS

Update... I phase... Save Undo Close Help

Breakdown Structure - TESTRB


- Test RBS
  - XM
  - XP
    - B
      - DAWS\_PATRICIA\_R
      - ODOM\_MARY\_L
    - XD
    - MISC
      - DFRC\_OOC



# Before Department Change

Cobra Spreadsheet - [CAP\_RSLT]

File Edit View Insert Format Tools Window Help



Anal 10 100%

V29	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Program		Description				Approval:											
2	RBSTEST		Test Moving RBS					Program Manager										
3	Run Date		Status Date					Functional Manager										
4			9/30/2007					Cost Account Manager										
5																		
6	Res Level 3	WBS	Resource			OCT07	NOV07	DEC07	JAN08	FEB08	MAR08	APR08	MAY08	JUN08	JUL08	AUG08	SEP08	Cumulative
7	B																	
8		1.01.03 Program/Project Control																
9		DAWS_PATRICIA_R																
10		HOURS	PV		154	148	141	154	141	141	148	148	141	154	141	148	1,750	
11		DOLLARS	PV		12,274	11,740	11,206	12,274	11,206	11,206	11,740	11,740	11,206	12,274	11,206	11,740	139,814	
12		ODOM_MARY_L																
13		HOURS	PV		154	148	141	154	141	141	148	148	141	154	141	148	1,750	
14		DOLLARS	PV		12,274	11,740	11,206	12,274	11,206	11,206	11,740	11,740	11,206	12,274	11,206	11,740	139,814	
15		WBS Totals																
16		HOURS	PV		309	295	282	309	282	282	295	295	282	309	282	295	3,516	
17		DOLLARS	PV		24,547	23,480	22,413	24,547	22,413	22,413	23,480	23,480	22,413	24,547	22,413	23,480	279,628	
18		Total Currency	PV		24,547	23,480	22,413	24,547	22,413	22,413	23,480	23,480	22,413	24,547	22,413	23,480	279,628	
19	BE[3] Totals																	
20		HOURS	PV		309	295	282	309	282	282	295	295	282	309	282	295	3,516	
21		DOLLARS	PV		24,547	23,480	22,413	24,547	22,413	22,413	23,480	23,480	22,413	24,547	22,413	23,480	279,628	
22	Total Currency		PV		24,547	23,480	22,413	24,547	22,413	22,413	23,480	23,480	22,413	24,547	22,413	23,480	279,628	
23	DFRC_ODC																	
24		1.06.02 Routine Maintenance																
25		DFRC_ODC																
26		DOLLARS	PV		0	0	0	0	0	176,316	455,263	296,053	138,158	302,632	442,105	189,474	2,000,000	
27		WBS Totals																
28		DOLLARS	PV		0	0	0	0	0	176,316	455,263	296,053	138,158	302,632	442,105	189,474	2,000,000	
29		Total Currency	PV		0	0	0	0	0	176,316	455,263	296,053	138,158	302,632	442,105	189,474	2,000,000	
30	BE[3] Totals																	
31		DOLLARS	PV		0	0	0	0	0	176,316	455,263	296,053	138,158	302,632	442,105	189,474	2,000,000	
32	Total Currency		PV		0	0	0	0	0	176,316	455,263	296,053	138,158	302,632	442,105	189,474	2,000,000	
33	Grand Totals																	
34		HOURS	PV		309	295	282	309	282	282	295	295	282	309	282	295	3,516	
35		DOLLARS	PV		24,547	23,480	22,413	24,547	22,413	198,729	478,743	319,533	160,571	327,179	464,518	212,954	2,279,627	
36		Total Currency	PV		24,547	23,480	22,413	24,547	22,413	198,729	478,743	319,533	160,571	327,179	464,518	212,954	2,279,627	
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Report Cal Data Title Results



# Department Change/WBS Planning the Same

Deltek Cobra

File Edit Database Status Tools Reports System Window Help

Programs - TEST

Status Date: 09/30/2007 Batch No: 915

WBS	ORG	PRD	Description	PV	EV	AC	BAC	EAC	Status
1.01.02	B	TEST_EVM	Program/Project Control	\$0.00	\$0.00	\$0.00	\$553,254.96	\$0.00	Unopen
1.06.02	B	TEST_EVM	Routine Maintenance	\$0.00	\$0.00	\$0.00	\$4,000,000.00	\$0.00	Unopen

WP	Description	PV	EV	AC	BAC	EAC	Status
1.01	Test input	\$0.00	\$0.00	\$0.00	\$553,254.96	\$0.00	Unopen

Details - Control Account 1.01.02.02.1151.516 - Work Package 1.01 (Unopen)

Status: Baseline | Actual | Forecast | Codes | Notes

Desc: Test input Schedule Start: 10/01/2007 Finish: 09/30/2008

PMT: Level of Effort

Budget Costs

Reporting Set Filter: All

Resource	Description	Class	Class Description	Budget	Units
DAW'S_PATRICIA_R		CB	Current Budget	1750.00	HOURS
ODDM_MARY_L		CB	Current Budget	1750.00	HOURS

Work Breakdown Structure - TEST

- Test RBS
  - 1.01
    - 1.01.02
      - DAW'S\_PATRICIA\_R
      - ODDM\_MARY\_L
    - 1.06
      - MISC
        - DFRC\_OOC

NUM

Start | Inbox - Microsoft O... | Deltek Cobra | Microsoft PowerPol... | Cobra Spreadsheet ...





# After Department Change

Cobra Spreadsheet - [CAP_RSLT]																		
File Edit View Insert Format Tools Window Help																		
Anal 10 100%																		
X9																		
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	
1	Program:	Description:				Approval:												
2	RBSTEST	Test Moving RBS					Program Manager											
3	Run Date:	Status Date					Functional Manager											
4		9/30/2007					Cost Account Manager											
5																		
6	Res Level	WBS	Resource			OCT07	NOV07	DEC07	JAN08	FEB08	MAR08	APR08	MAY08	JUN08	JUL08	AUG08	SEP08	Cumulative
7	B																	
8		1.01.03 Program/Project Control																
9		DAWS, PATRICIA_R																
10		HOURS	PV		154	148	141	154	141	141	148	148	141	154	141	148	1,758	
11		DOLLARS	PV		12,274	11,740	11,206	12,274	11,206	11,206	11,740	11,740	11,206	12,274	11,206	11,740	139,814	
12		WBS Totals:																
13		HOURS	PV		154	148	141	154	141	141	148	148	141	154	141	148	1,758	
14		DOLLARS	PV		12,274	11,740	11,206	12,274	11,206	11,206	11,740	11,740	11,206	12,274	11,206	11,740	139,814	
15		Total Currency	PV		12,274	11,740	11,206	12,274	11,206	11,206	11,740	11,740	11,206	12,274	11,206	11,740	139,814	
16	BE[3] Totals:																	
17		HOURS	PV		154	148	141	154	141	141	148	148	141	154	141	148	1,758	
18		DOLLARS	PV		12,274	11,740	11,206	12,274	11,206	11,206	11,740	11,740	11,206	12,274	11,206	11,740	139,814	
19		Total Currency	PV		12,274	11,740	11,206	12,274	11,206	11,206	11,740	11,740	11,206	12,274	11,206	11,740	139,814	
20	C																	
21		1.01.03 Program/Project Control																
22		ODOM, MARY_L																
23		HOURS	PV		154	148	141	154	141	141	148	148	141	154	141	148	1,758	
24		DOLLARS	PV		12,274	11,740	11,206	12,274	11,206	11,206	11,740	11,740	11,206	12,274	11,206	11,740	139,814	
25		WBS Totals:																
26		HOURS	PV		154	148	141	154	141	141	148	148	141	154	141	148	1,758	
27		DOLLARS	PV		12,274	11,740	11,206	12,274	11,206	11,206	11,740	11,740	11,206	12,274	11,206	11,740	139,814	
28		Total Currency	PV		12,274	11,740	11,206	12,274	11,206	11,206	11,740	11,740	11,206	12,274	11,206	11,740	139,814	
29	BE[3] Totals:																	
30		HOURS	PV		154	148	141	154	141	141	148	148	141	154	141	148	1,758	
31		DOLLARS	PV		12,274	11,740	11,206	12,274	11,206	11,206	11,740	11,740	11,206	12,274	11,206	11,740	139,814	
32		Total Currency	PV		12,274	11,740	11,206	12,274	11,206	11,206	11,740	11,740	11,206	12,274	11,206	11,740	139,814	
33	DFRC_ODC																	
34		1.06.02 Routine Maintenance																
35		DFRC_ODC																
36		DOLLARS	PV		0	0	0	0	0	0	176,316	455,263	296,053	138,158	302,632	442,105	189,474	2,000,000
37		WBS Totals:																
38		DOLLARS	PV		0	0	0	0	0	0	176,316	455,263	296,053	138,158	302,632	442,105	189,474	2,000,000
39		Total Currency	PV		0	0	0	0	0	0	176,316	455,263	296,053	138,158	302,632	442,105	189,474	2,000,000
40	BE[3] Totals:																	
41		DOLLARS	PV		0	0	0	0	0	0	176,316	455,263	296,053	138,158	302,632	442,105	189,474	2,000,000
42		Total Currency	PV		0	0	0	0	0	0	176,316	455,263	296,053	138,158	302,632	442,105	189,474	2,000,000
43	Grand Totals																	
44		HOURS	PV		309	295	282	309	282	282	295	295	282	309	282	295	3,516	
45		DOLLARS	PV		24,547	23,480	22,413	24,547	22,413	198,729	478,743	319,533	160,571	327,179	464,518	212,954	2,279,627	
46		Total Currency	PV		24,547	23,480	22,413	24,547	22,413	198,729	478,743	319,533	160,571	327,179	464,518	212,954	2,279,627	
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# Suggestions

- Concatenate Code to Resource Name
  - Currently – Odom\_Mary\_L
  - Suggested – Odom\_Mary\_L\_B
    - Data will not move and resource can now be planned under new code
- Raise the level of resource to a generic for department/company
  - A\_FTE
  - A\_WYE



# The Ugly

Dual Data Entry of Rates





# Issue: Dual Entry of Rates

Deltek Cobra - [Rates - DFRC\_RATES]

Rate Set	Description	Date	Value
A		10/01/2007	69.000000
A_INFINITY_SCSC		10/01/2008	70.870000
A_LRC		10/01/2009	73.250000
A_WYE		10/01/2010	75.700000
ARC_PLT_FTE		10/01/2011	78.240000
ARC_PLT_WYE		10/01/2012	80.870000
ARC_PRG_FTE		10/01/2013	83.580000
ARC_PRG_WYE		10/01/2014	86.390000
ARC_SCI_FTE			
ARC_SCI_WYE			
B			
B_INFINITY_SCSC			
B_WYE			
C			
C_WYE			

Details

Rate Set: A

Description:

Help Close

Cobra Explorer Rates - DFRC\_RATES

Microsoft Project - PMB-DHANA TRACER CERDEC (PHASE II) [Read-Only]

Resource Name Type Material Label Initials Group Max. Util. Std. Rate Ovr

Resource Name	Type	Material Label	Initials	Group	Max. Util.	Std. Rate	Ovr
A_FTE	Work		A		1,700%	\$0.00/hr	
OF_CSC_PILOTS	Work		O		700%	\$0.00/hr	
OF_FTE	Work		O		1,000%	\$0.00/hr	
OF_WFE	Work		O		0%	\$0.00/hr	
OM_CSC	Work		O		5,300%	\$0.00/hr	
OM_FTE	Work		O		7,400%	\$0.00/hr	

Resource Information

General Costs Notes Custom Fields

Resource Name: A\_FTE

Cost rate tables

For rates, enter a value or a percentage increase or decrease from the previous rate. For instance, if a resource's Per Use Cost is reduced by 20%, type -20%.

Effective Date	Standard Rate	Overtime Rate	Per Use Cost
10/01/2007	\$0.00/h	\$0.00/h	\$0.00
10/01/2008	\$0.00/h	\$0.00/h	\$0.00
10/01/2009	\$0.00/h	\$0.00/h	\$0.00
10/01/2010	\$0.00/h	\$0.00/h	\$0.00
10/01/2011	\$0.00/h	\$0.00/h	\$0.00
10/01/2012	\$0.00/h	\$0.00/h	\$0.00
10/01/2013	\$0.00/h	\$0.00/h	\$0.00
10/01/2014	\$0.00/h	\$0.00/h	\$0.00

Cost accrual: Prorated

Help Details... OK Cancel

start

Inbox - ... Microsoft ... Deltek ... Welco ... Z Win ... Dhana ... Z Mic ... 11:02 AM



# Solution: Rate Import Macro

- Export Cobra Rate File
- Export Cobra Calculation File
- Run MSP Rate Import Macro



# Macros

## Caveat

- Timephased export macro from MSP to Cobra
  - Created by a NASA DFRC employee. Will not be maintained/supported by NASA
- Rate import macro from Cobra to MSP
  - Created by a NASA DFRC employee. Will not be maintained/supported by NASA





# Timephased MSP Export Macro





# Timephased Resource Loading

Microsoft Project - Ikhana TRACER Phase II rebuild with Macros.mpp

File Edit View Insert Format Tools Project Report Collaborate Window Help

Type a question for help

No Group Show Arial 10 B I U

3,128.63h

					2010											
					Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar				
0				Ikhana TRACER Phase II rebuild with Macros	Work	3,128.63h	2,596.95h	2,908.65h	3,139.08h	3,765.12h	2,106.45h	1,780.8h	2,407.4h			
1				DFRC Milestones	Work											
2				Project Start	Work											
3				Final Requirements Definition Complete	Work											
4				Phase II Start	Work											
5				Design & Analysis Complete	Work											
6				Fab & Installation Complete	Work											
7				Ground Test Complete	Work											
8				FAA Approval of Ikhana / TRACER COA	Work											
9				Flight Test Complete	Work											
10				Project End	Work											
11				High Level Resources	Work											
12	1.01	X.XP.Z	Dryden.TRACER	L01	CMO	Work										
					DFRC_ODC	Work	84,022.72	84,022.72	84,022.72	84,022.72	84,022.72	84,022.72	84,022.72	84,022.72		
13	1.01.01	X.XP.Z	Dryden.TRACER		Project Management	Work	835.8h	751.8h	394.8h	357.2h	413.6h	357.2h	357.2h	432		
14	1.01.01	X.XP.Z	Dryden.TRACER	L01	Phase II Project Management	Work	394.8h	394.8h	394.8h	357.2h	413.6h	357.2h	357.2h	432		
					DFRC_ODC	Work	871.39	871.39	871.39	788.4	912.88	788.4	788.4	954		
					Z_FTE	Work	294h	294h	294h	266h	308h	266h	266h	30		
					Z_GRD	Work	100.8h	100.8h	100.8h	91.2h	105.6h	91.2h	91.2h	110		
15				Resources	Work	441h	357h									
16	1.01.01	X.XP.Z	Dryden.TRACER	L02	Travel	Work										
					DFRC_TRAVEL	Work	5,000	0	5,000	0	5,000	0	5,000			
17	1.01.01	X.XP.Z	Dryden.TRACER	L03	Fuel	Work										
					DFRC_ODC	Work										
18	1.01.01	X.XP.Z	Dryden.TRACER	L04	IT Support	Work										
					DFRC_ODC	Work	26,772.91	26,772.91	26,772.91	24,223.11	26,047.81	24,223.11	24,223.11	29,322		
19	1.01.01	X.XP.Z	Dryden.TRACER	L05	WATR Support	Work										
					DFRC_ODC	Work										
20	1.01.01	X.XP.Z	Dryden.TRACER	L06	Satellite Support	Work										
					DFRC_ODC	Work	41,832.67	41,832.67	41,832.67	37,848.61	43,824.7	37,848.61	37,848.61	45,816		
21	1.01.01	X.XP.Z	Dryden.TRACER	L07	Meteorology Support	Work										
					DFRC_ODC	Work										

Ready

Microsoft PowerPoint - Tracer TRACER\_Ikhana\_SO... Microsoft Project - I...

6:59 PM





# Run the Export Macro

Microsoft Project - Ikhana TRACER Phase II rebuild 14OCT09 Baseline.mpp

File Edit View Insert Format Tools Project Report Collaborate Window Help

Spelling... F7  
AutoCorrect Options...  
Document Management  
Links Between Projects...  
Import Outlook Tasks...  
Change Working Time...  
Assign Resources... Alt+F10  
Build Team from Enterprise... Ctrl+T  
Substitute Resources...  
Local Project Cache  
Resource Sharing  
Level Resources...  
Tracking  
Macro  
Organizer...  
Customize  
Options...  
Enterprise Options...

Macros... Alt+F8  
Record New Macro...  
Security...  
Visual Basic Editor Alt+F11

		2010											
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	
0	Ikhana TRACER Phase II rebuild	2,891.63h	3,128.63h	2,596.95h	2,950.65h	3,139.08h	3,765.12h	2,383.37h	2,079.68h	2,108.4h	2,349.6h	2,783.5h	
1	DFRC Milestones												
2	Project Start												
3	Final Requirements												
4	Phase II Start												
5	Design & Analysis												
6	Fab & Installation												
7	Ground Test Complete												
8	FAA Approval of Ikhana												
9	Flight Test Complete												
10	Project End												
11	High Level Resource												
12	CMO												
13	DFRC_ODC												
14	Project Management												
15	Resources	1,348.8 hrs											
16	Travel	0 hrs											
17	Fuel	0 hrs											
18	IT Support	0 hrs											
19	WATR Support	0 hrs											
20	Satellite Support	0 hrs											
21	Meteorology Support	0 hrs											

Ready

Microsoft PowerPoint... Tracer TRACER\_Ikhana\_SO... Microsoft Project - L...

6:54 PM

# Export Macro

Microsoft Project - Ikhana TRACER Phase II rebuild with Macros.mpp

File Edit View Insert Format Tools Project Report Collaborate Window Help

Type a question for help

No Group

Show Arial 10 B I U

					2010											
					Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar				
0				- Ikhana TRACER Phase II rebuild with Macros	Work	3,128.63h	2,596.95h	2,908.65h	3,139.08h	3,765.12h	2,106.45h	1,780.8h	2,407.4h			
1				- DFRC Milestones	Work											
2				Project Start	Work											
3																
4																
5																
6																
7																
8																
9																
10																
11																
12	1.01	X.XP.Z	Dryden.TRACER	L01												
13	1.01.01	X.XP.Z	Dryden.TRACER													
14	1.01.01	X.XP.Z	Dryden.TRACER	L01												
15																
16	1.01.01	X.XP.Z	Dryden.TRACER	L02												
17	1.01.01	X.XP.Z	Dryden.TRACER	L03												
18	1.01.01	X.XP.Z	Dryden.TRACER	L04												
19	1.01.01	X.XP.Z	Dryden.TRACER	L05												
20	1.01.01	X.XP.Z	Dryden.TRACER	L06												
21	1.01.01	X.XP.Z	Dryden.TRACER	L07												
				- WATR Support	Work											
				DFRC_ODC	Work											
				- Satellite Support	Work											
				DFRC_ODC	Work	41,832.67	41,832.67	41,832.67	37,848.61	43,824.7	37,848.61	37,848.61	45,516			
				- Meteorology Support	Work											
				DFRC_ODC	Work											

Task Usage

Macro name:

Ikhana TRACER Phase II rebuild with Macros.mpp!ExportTimePhasedResources

Ikhana TRACER Phase II rebuild with Macros.mpp!ActivityExport

Ikhana TRACER Phase II rebuild with Macros.mpp!ExportTimePhasedResources

Ikhana TRACER Phase II rebuild with Macros.mpp!Filter\_Select

Format\_Duration

Ikhana TRACER Phase II rebuild with Macros.mpp!ImportRatesFromCobra

Ikhana TRACER Phase II rebuild with Macros.mpp!LastMonthEstimate

ResMgmt\_TaskEntry

Ikhana TRACER Phase II rebuild with Macros.mpp!RiskIt

Rollup\_Formatting

Ikhana TRACER Phase II rebuild with Macros.mpp!SetTestToolbar

Ikhana TRACER Phase II rebuild with Macros.mpp!StartTaskTrace

Toggle\_Read\_Only

Ikhana TRACER Phase II rebuild with Macros.mpp!Trace

Ikhana TRACER Phase II rebuild with Macros.mpp!UnRiskIt

Macros in: All Open Projects

Description

Run

Cancel

Step Into

Edit

Create

Delete

Options...



Microsoft PowerPoint

Tracer

TRACER\_Ikhana\_SO...

Microsoft Project - L...

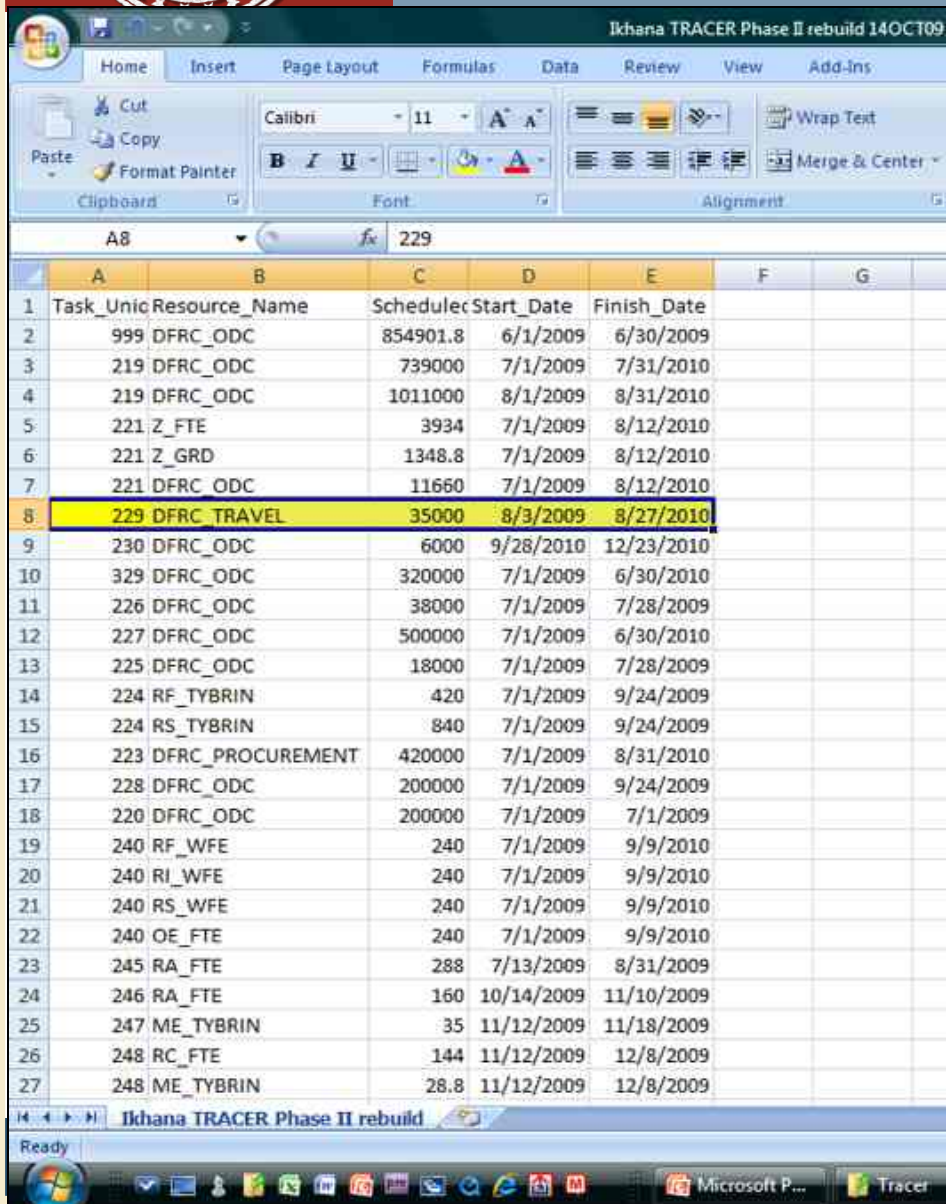
7:14 PM



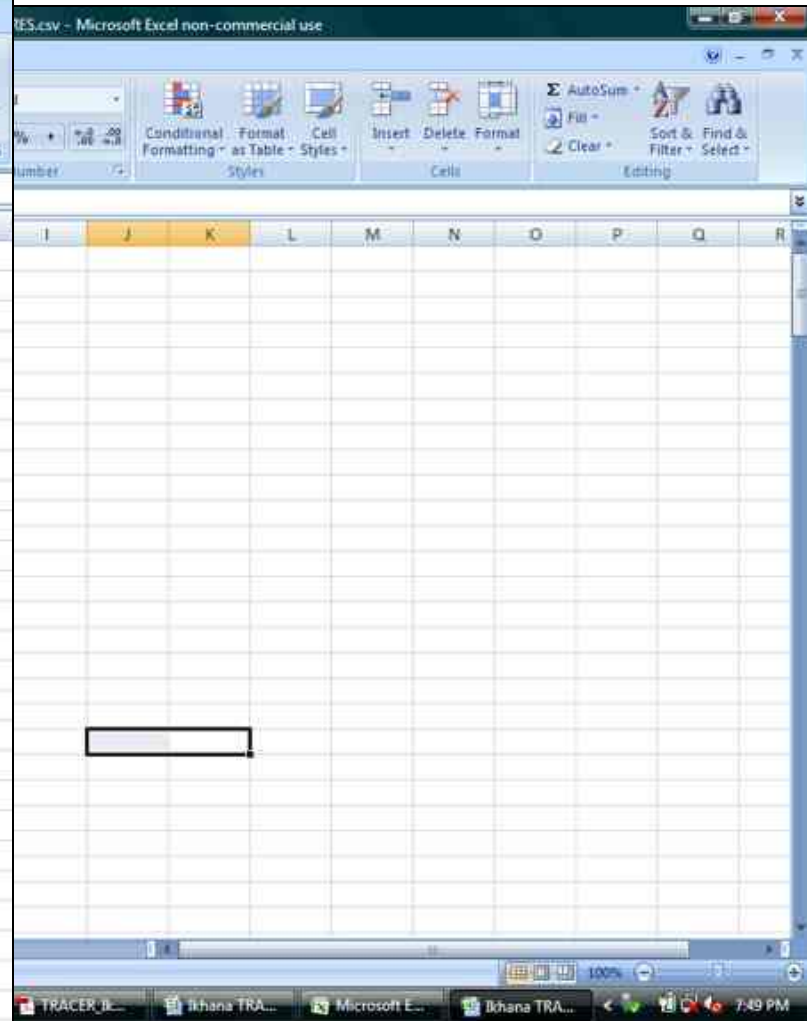
# Resource Distribution Results

MSP "Files Save As"

MSP Export Macro



Task_Unic	Resource_Name	Schedule	Start_Date	Finish_Date
999	DFRC_ODC	854901.8	6/1/2009	6/30/2009
219	DFRC_ODC	739000	7/1/2009	7/31/2010
219	DFRC_ODC	1011000	8/1/2009	8/31/2010
221	Z_FTE	3934	7/1/2009	8/12/2010
221	Z_GRD	1348.8	7/1/2009	8/12/2010
221	DFRC_ODC	11660	7/1/2009	8/12/2010
229	DFRC_TRAVEL	35000	8/3/2009	8/27/2010
230	DFRC_ODC	6000	9/28/2010	12/23/2010
329	DFRC_ODC	320000	7/1/2009	6/30/2010
226	DFRC_ODC	38000	7/1/2009	7/28/2009
227	DFRC_ODC	500000	7/1/2009	6/30/2010
225	DFRC_ODC	18000	7/1/2009	7/28/2009
224	RF_TYBRIN	420	7/1/2009	9/24/2009
224	RS_TYBRIN	840	7/1/2009	9/24/2009
223	DFRC_PROCUREMENT	420000	7/1/2009	8/31/2010
228	DFRC_ODC	200000	7/1/2009	9/24/2009
220	DFRC_ODC	200000	7/1/2009	7/1/2009
240	RF_WFE	240	7/1/2009	9/9/2010
240	RI_WFE	240	7/1/2009	9/9/2010
240	RS_WFE	240	7/1/2009	9/9/2010
240	OE_FTE	240	7/1/2009	9/9/2010
245	RA_FTE	288	7/13/2009	8/31/2009
246	RA_FTE	160	10/14/2009	11/10/2009
247	ME_TYBRIN	35	11/12/2009	11/18/2009
248	RC_FTE	144	11/12/2009	12/8/2009
248	ME_TYBRIN	28.8	11/12/2009	12/8/2009





## Export Resources Macro

- This macro should be able to be used by any user who intends to export from MSP into Cobra.
- It will not be supported by Dryden.
- See Notes Page for actual code.



# **Rates - Cobra 2 MSP Macro**





# Cobra Rate File Export

CobraRateFile.xls [Compatibility Mode] - Microsoft Excel non-commercial use

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Rate File	Rate Set	Date	Value	Code 1	Code 2							
2	DFRC_RATES	A	10/1/2007	69.8000	FTE								
3	DFRC_RATES	A	10/1/2008	72.5700	FTE								
4	DFRC_RATES	A	10/1/2009	75.4500	FTE								
5	DFRC_RATES	A	10/1/2010	78.4400	FTE								
6	DFRC_RATES	A	10/1/2011	81.5500	FTE								
7	DFRC_RATES	A	10/1/2012	84.7800	FTE								
8	DFRC_RATES	A	10/1/2013	88.1400	FTE								
9	DFRC_RATES	A_INFINITY_SCSC	10/1/2008	41.4600	WYE								
10	DFRC_RATES	A_LRC	10/1/2008	22.5900	WYE								
11	DFRC_RATES	A_WYE	10/1/2006	33.5800	WFE								
12	DFRC_RATES	A_WYE	10/1/2008	41.4800	WFE								
13	DFRC_RATES	A_WYE	10/1/2009	44.3900	WFE								
14	DFRC_RATES	A_WYE	10/1/2010	47.5000	WFE								
15	DFRC_RATES	A_WYE	10/1/2011	50.8200	WFE								
16	DFRC_RATES	A_WYE	10/1/2012	54.3800	WFE								
17	DFRC_RATES	A_WYE	10/1/2013	58.1800	WFE								
18	DFRC_RATES	ARC_PLT_FTE	10/1/2009	100.1700									
19	DFRC_RATES	ARC_PLT_FTE	10/1/2010	105.8600									
20	DFRC_RATES	ARC_PLT_FTE	10/1/2011	111.5500									
21	DFRC_RATES	ARC_PLT_FTE	10/1/2012	118.3800									
22	DFRC_RATES	ARC_PLT_FTE	10/1/2013	124.6400									
23	DFRC_RATES	ARC_PLT_FTE	10/1/2014	149.1200									
24	DFRC_RATES	ARC_PLT_WYE	10/1/2009	146.2700									
25	DFRC_RATES	ARC_PLT_WYE	10/1/2010	150.8300									
26	DFRC_RATES	ARC_PLT_WYE	10/1/2011	155.3800									
27	DFRC_RATES	ARC_PLT_WYE	10/1/2012	159.9300									
28	DFRC_RATES	ARC_PLT_WYE	10/1/2013	164.4800									
29	DFRC_RATES	ARC_PLT_WYE	10/1/2014	169.6100									
30	DFRC_RATES	ARC_PRG_FTE	10/1/2009	100.1700									
31	DFRC_RATES	ARC_PRG_FTE	10/1/2010	105.8600									
32	DFRC_RATES	ARC_PRG_FTE	10/1/2011	111.5500									

Report Template

Ready

Microsoft Powe... Tracer TRACER\_khانا... khانا TRACER ... Microsoft Excel ... 7:37 PM

Must be these columns or modify macro





# Cobra Calculation File

CobraResourceCalculations.xls [Compatibility Mode] - Microsoft Excel non-commercial use

Home Insert Page Layout Formulas Data Review View Add-Ins

Clipboard Font Alignment Number Styles Cells Editing

Resource File

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	Resource File	Resource	Description	Field Name	Result	Line	Units	Rate Set	Currency	Result Code	Source 1	Source 2	Source 3	Source 4	Source 5	Source 6	Source 7	Source 8	Source 9	Source 10
2	RESOURCE	DFRC_LABOR	Dryden Flight Rese	HOURS	HOURS	1	HOURS		FALSE	H										
3	RESOURCE	DFRC_LABOR	Dryden Flight Rese	DIRECT	\$	2	\$	X_WYE	TRUE		HOURS									
4	RESOURCE	DFRC_LABOR	Dryden Flight Rese	ESCALATION	\$	3	\$	ESC_FTE	TRUE		DIRECT									
5	RESOURCE	CMO		DIRECT	DIRECT	2	\$													
6	RESOURCE	CMO		ESCALATION	ESCALATI	3	\$	ESC_ODC	TR											
7	RESOURCE	A_FTE		HOURS	HOURS	1	HOURS		FA											
8	RESOURCE	A_FTE		DIRECT	DIRECT	2	\$	A	TRUE		HOURS									
9	RESOURCE	A_FTE		ESCALATION	ESCALATI	3	\$	ESC_FTE	TRUE		DIRECT									
10	RESOURCE	A_INFINITY		HOURS	HOURS	1	HOURS		FALSE	H										
11	RESOURCE	A_INFINITY		DIRECT	DIRECT	2	\$	A_INFINITY	TRUE		HOURS									
12	RESOURCE	A_INFINITY		ESCALATION	ESCALATI	3	\$	ESC_CONT	TRUE		DIRECT									
13	RESOURCE	A_LRC		HOURS	HOURS	1	HOURS		FALSE	H										
14	RESOURCE	A_LRC		DIRECT	DIRECT	2	\$	A_LRC	TRUE		HOURS									
15	RESOURCE	A_LRC		ESCALATION	ESCALATI	3	\$	ESC_CONT	TRUE		DIRECT									
16	RESOURCE	A_SCSC		HOURS	HOURS	1	HOURS		FALSE	H										
17	RESOURCE	A_SCSC		DIRECT	DIRECT	2	\$	A_INFINITY	TRUE		HOURS									
18	RESOURCE	A_SCSC		ESCALATION	ESCALATI	3	\$	ESC_CONT	TRUE		DIRECT									
19	RESOURCE	A_WFE		HOURS	HOURS	1	HOURS		FALSE	H										
20	RESOURCE	A_WFE		DIRECT	DIRECT	2	\$	A	TRUE		HOURS									
21	RESOURCE	A_WFE		ESCALATION	ESCALATI	3	\$	ESC_FTE	TRUE		DIRECT									
22	RESOURCE	A_WYE		HOURS	HOURS	1	HOURS		FALSE	H										
23	RESOURCE	A_WYE		DIRECT	DIRECT	2	\$	A_WYE	TRUE		HOURS									
24	RESOURCE	A_WYE		ESCALATION	ESCALATI	3	\$	ESC_FTE	TRUE		DIRECT									
25	RESOURCE	CF_CI TRAVEL		HOURS	HOURS	1	HOURS		FALSE	H										
26	RESOURCE	CF_CI TRAVEL		DIRECT	DIRECT	2	\$	CF_CI	TRUE		HOURS									
27	RESOURCE	CF_CI TRAVEL		ESCALATION	ESCALATI	3	\$	ESC_CONT	TRUE		DIRECT									
28	RESOURCE	CF_FTE		HOURS	HOURS	1	HOURS		FALSE	H										
29	RESOURCE	CF_FTE		DIRECT	DIRECT	2	\$	CF	TRUE		HOURS									
30	RESOURCE	CF_FTE		ESCALATION	ESCALATI	3	\$	ESC_FTE	TRUE		DIRECT									
31	RESOURCE	CF_INFINITY		HOURS	HOURS	1	HOURS		FALSE	H										
32	RESOURCE	CF_INFINITY		DIRECT	DIRECT	2	\$	CF_INFINIT	TRUE		HOURS									
33	RESOURCE	CF_INFINITY		ESCALATION	ESCALATI	3	\$	ESC_CONT	TRUE		DIRECT									
34	RESOURCE	CF_SCSC		HOURS	HOURS	1	HOURS		FALSE	H										
35	RESOURCE	CF_SCSC		DIRECT	DIRECT	2	\$	CF_INFINIT	TRUE		HOURS									
36	RESOURCE	CF_SCSC		ESCALATION	ESCALATI	3	\$	ESC_CONT	TRUE		DIRECT									
37	RESOURCE	CF_WFE		HOURS	HOURS	1	HOURS		FALSE	H										

Report Template

Ready

Microsoft P... Tracer TRACER\_1k... Ihana TRA... CobraRateFr... CobraResou...

7:41 PM

Must be these columns or modify macro



## MSP Resource Rate - Before Macro

Microsoft Project - Ikhana TRACER Phase II rebuild with Macros.mpp

File Edit View Insert Format Tools Project Report Collaborate Window Help

Type a question for help

No Group Show Arial 8 B I U V

	Resource Name	Type	Material Label	Initials	Group	Max. Un	Std. Rat	Ovt. Rat	Cost/Us	Accrue A	Base Calendar	Code
1	A_FTE	Work		A		1,700%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard	
2	CR_FTE	Work		C		1,400%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Resource Calenc	
3	DFRC_ODC	Material		D			\$1.00		\$0.00	Prorated		
4	DFRC_PROCUREMENT	Material										
5	DFRC_TRAVEL	Material										
6	MC_ARCATA	Work										
7	MC_FTE	Work										
8	MC_WFE	Work										
9	ME_FTE	Work										
10	ME_TYBRIN	Work										
11	ME_WYE	Work										
12	MO_FTE	Work										
13	MO_TYBRIN	Work										
14	MO_WFE	Work										
15	MR_ARCATA	Work										
16	MR_FTE	Work										
17	MR_WFE	Work										
18	OA_CSC	Work										
19	OA_FTE	Work										
20	OA_WFE	Work										
21	OE_CSC	Work										
22	OE_FTE	Work										
23	OE_TYBRIN	Work										
24	OE_WFE	Work										
25	OF_CSC_PILOTS	Work										
26	OF_FTE	Work										
27	OF_WFE	Work										
28	OM_CSC	Work										
29	OM_FTE	Work										
30	OM_WFE	Work										
31	OR_FTE	Work										
32	RA_FTE	Work										
33	RA_TYBRIN	Work										

Resource Information

General Costs Notes Custom Fields

Resource Name: A\_FTE

Cost rate tables

For rates, enter a value or a percentage increase or decrease from the previous rate. For instance, if a resource's Per Use Cost is reduced by 20%, type -20%.

A (Default)	B	C	D	E
\$0.00/h				
Effective Date	Standard Rate	Overtime Rate	Per Use Cost	
--	\$0.00/h	\$0.00/h	\$0.00	

Cost accrual: Prorated

Help Details... OK Cancel

Microsoft Project - Ikhana TRACER Phase II rebuild with Macros.mpp

7:22 PM





Microsoft Project - Ikhana TRACER Phase II rebuild with Macros.mpp

File Edit View Insert Format Tools Project Report Collaborate Window Help

No Group

Task Usage

WBS	OBS	PROJECT	WP	MS	Task Name	Details	2010							
							Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
0					- Ikhana TRACER Phase II rebuild with Macros	Work	3,128.63h	2,596.95h	2,908.65h	3,139.08h	3,765.12h	2,106.45h	1,780.8h	2,407.4
1					- DFRC Milestones	Work								
2					Project Start	Work								
3														
4														
5														
6														
7														
8														
9														
10														
11														
12	1.01	X.XP.Z	Dryden,TRACER	L01										
13	1.01.01	X.XP.Z	Dryden,TRACER											
14	1.01.01	X.XP.Z	Dryden,TRACER	L01										
15														
16	1.01.01	X.XP.Z	Dryden,TRACER	L02										
17	1.01.01	X.XP.Z	Dryden,TRACER	L03										
18	1.01.01	X.XP.Z	Dryden,TRACER	L04										
19	1.01.01	X.XP.Z	Dryden,TRACER	L05	- WATR Support	Work								
20	1.01.01	X.XP.Z	Dryden,TRACER	L06	- Satellite Support	Work								
21	1.01.01	X.XP.Z	Dryden,TRACER	L07	- Meteorology Support	Work								

Macros

Macro name:

Ikhana TRACER Phase II rebuild with Macros.mpp\ImportRatesFromCobra

Ikhana TRACER Phase II rebuild with Macros.mpp\ActivityExport

Ikhana TRACER Phase II rebuild with Macros.mpp\ExportTimePhasedResources

Ikhana TRACER Phase II rebuild with Macros.mpp\Filter\_Select

Format\_Duration

Ikhana TRACER Phase II rebuild with Macros.mpp\ImportRatesFromCobra

Ikhana TRACER Phase II rebuild with Macros.mpp>LastMonthEstimate

ResMgmt\_TaskEntry

Ikhana TRACER Phase II rebuild with Macros.mpp\RiskIt

Rollup\_Formatting

Ikhana TRACER Phase II rebuild with Macros.mpp\SetTestToolbar

Ikhana TRACER Phase II rebuild with Macros.mpp\StartTaskTrace

Toggle\_Read\_Only

Ikhana TRACER Phase II rebuild with Macros.mpp\Trace

Ikhana TRACER Phase II rebuild with Macros.mpp\UnRiskIt

Macros in: All Open Projects

Description

Run Cancel Step Info Edit Create Delete Options...

Microsoft PowerPo... Tracer TRACER\_Ikhana\_SO... Microsoft Project - L... 7:18 PM



# After Macro

Microsoft Project - Ikhana TRACER RateImport Test.mpp

File Edit View Insert Format Tools Project Report Collaborate Window Help

Type a question for help

No Group

Show Arial 8 B I U

	Resource Name	Type	Material Label	Initials	Group	Max. Un	Std. Rate	Ovt. Rate	Cost/Us	Accrue A	Base Calendar	Code
1	A_FTE	Work		A		1,700%	\$75.45/hr	\$0.00/hr	\$0.00	Prorated	Standard	
2	CR_FTE	Work		C		1,400%	\$84.60/hr	\$0.00/hr	\$0.00	Prorated	Resource Calendar	
3	DFRC_ODC	Material		D			\$1.00		\$0.00	Prorated		
4	DFRC_PROCUREMENT	Material										
5	DFRC_TRAVEL	Material										
6	MC_ARCATA	Work										
7	MC_FTE	Work										
8	MC_WFE	Work										
9	ME_FTE	Work										
10	ME_TYBRIN	Work										
11	ME_WYE	Work										
12	MO_FTE	Work										
13	MO_TYBRIN	Work										
14	MO_WFE	Work										
15	MR_ARCATA	Work										
16	MR_FTE	Work										
17	MR_WFE	Work										
18	OA_CSC	Work										
19	OA_FTE	Work										
20	OA_WFE	Work										
21	OE_CSC	Work										
22	OE_FTE	Work										
23	OE_TYBRIN	Work										
24	OE_WFE	Work										
25	OF_CSC_PILOTS	Work										
26	OF_FTE	Work										
27	OF_WFE	Work										
28	OM_CSC	Work				5,300%	\$58.33/hr	\$0.00/hr	\$0.00	Prorated	Resource Calendar	
29	OM_FTE	Work				2,400%	\$72.29/hr	\$0.00/hr	\$0.00	Prorated	Resource Calendar	
30	OM_WFE	Work				0%	\$72.29/hr	\$0.00/hr	\$0.00	Prorated	Resource Calendar	
31	OR_FTE	Work				1,300%	\$70.35/hr	\$0.00/hr	\$0.00	Prorated	Resource Calendar	
32	RA_FTE	Work		R		3,000%	\$74.08/hr	\$0.00/hr	\$0.00	Prorated	Resource Calendar	

Resource Information

General Costs Notes Custom Fields

Resource Name: A\_FTE

Cost rate tables:

For rates, enter a value or a percentage increase or decrease from the previous rate. For instance, if a resource's Per Use Cost is reduced by 20%, type -20%.

A (Default) B C D E

	Standard Rate	Overtime Rate	Per Use Cost
Effective Date	\$0.00/h	\$0.00/h	\$0.00
Mon 10/1/07	\$69.80/h	\$0.00/h	\$0.00
Wed 10/1/08	\$72.57/h	\$0.00/h	\$0.00
Thu 10/1/09	\$75.45/h	\$0.00/h	\$0.00
Fri 10/1/10	\$78.44/h	\$0.00/h	\$0.00
Sat 10/1/11	\$81.55/h	\$0.00/h	\$0.00

Cost accrual: Prorated

Help Details... OK Cancel

Microsoft PowerPoint... Tracer TRACER\_Ikhana\_SO... Ikhana TRACER Rate... 7:32 PM



# Import Rates Macro

- This macro was written with NASA Dryden specific calculations. Any variance between this and the way the user's calculation will have to be adjusted by someone in the user's organization.
- It will not be supported by NASA.
- See Notes Page for actual code.



## In Conclusion

- Lessons Learned
- Benefits
- CAM Comments
- Keys to Success
- Conclusions



## Lessons Learned

- Accounting / Data
  - Verify your data with spot checks
  - Determine how to budget and account for subcontractors
  - Don't forget about Overheads, contractor occupancy fees, computing fees, etc
- Data reconciliation
  - Reconcile as soon as possible each month
  - Cross check your EVMS data versus accounting



## Lessons Learned

- If integrating with another schedules, schedule face-to-face meetings periodically
- Take baby steps - don't try to do it all at once
- Training, re-training, and *re-training* is key
  - Don't be surprised if you need to train the same thing over and over
- It takes time to become ingrained into day-to-day business practices
- Mid-level managers don't always see the need for monthly deadlines
- EVMS seen as "Extra" work, until managers see the benefits

*You will have to adjust - be prepared for it*





## Lessons Learned

- Up-front project planning and baseline estimating insures the integration of cost, schedule, and technical performance
- Baseline development provides basis for early visibility of risk areas
  - Effective control
- Stable baseline ensures early warning of potential problems
- Allows for focused management by exception



## Benefits / Key Attributes of EVM

- Up-front project planning and baseline estimating insures the integration of cost, schedule, and technical performance
- Baseline development provides basis for early visibility of risk areas
- Effective control
  - Stable baseline ensures early warning of potential problems
  - Allows for focused management by exception





## CAM Comments on Management Value

- Less surprises
- We can keep an eye on cost and schedule
- Keeps the work focused on requirements
- S/W development metrics motivate team efficiency
- Communication between Contractor and JSSA tasks
- Realization that CAMs are interdependent
- It focuses on problem solving
- Helped in determining how many additional resources were necessary by analyzing performance data



## Keys to Success

- Committed Leadership
- Committed Management
- Committed Team
- Access to Strong EVM Knowledge
- Strong EVM Implementation Team
- Useable Documented Processes



## Conclusions

- In-House implementation of EVM is new paradigm for government
  - Previous focus - government EVM expertise in analysis of development contracts
  - In-house planning and accounting present unique challenges
- EVM internet web sites are good source of information, Another source is via national workshops
- Very little implementation experience is published at this time



# Question??

